

Wireless High Speed Ethernet and Serial Ports

The ESTEem Model 195E Series, designed for the rigors of the Industrial, Public Safety, and Federal markets, is the next generation wireless modem with *two Ethernet* and *one independent Serial RS-232C port*. The Model 195E Series provides wireless networking with RF data rates of up to *54 Mbps*, with a nominal 5 to 10+ mile range depending on the type an antenna used. Now you have greater bandwidth for all your control, video, and VoIP needs on one radio channel. Scalable Wireless networks over large geographical areas become a reality using the 195E Series *MESH* feature. The Model 195Eg and 195Ea provide 802.11g/a Wi-Fi protocol allowing connection by Client's laptops, PDA's and mobile tablets. All 195E Series products have a *Client Mode* so they can be used in mobile applications under a 195E Series radio canopy.



Model 195E Series Reduces Site Costs

- **Outdoor case design.** The new NEMA 4 case design and weatherproofing kit allows the unit to be indoors or outdoor pole mounted in harsh environments. This feature eliminates the enclosure costs needed with other radios.
- **Eliminates costly RF feed lines.** Direct pole mounting eliminates feedline cost and high signal losses.
- **Lower installation costs.** Simple pole mounting saves installation time and expense.

Software Features

- **High Security AES Encryption.** The 195E Series uses the high-security 128-bit AES-CCMP required in most municipal, public safety and federal applications. 195Eg is compatible with both IEEE 802.11i and WPA-2 encryption.
- **Simple Network Management Protocol (SNMP).** SNMP is standard in the 195Ed/g/p products and optional in the 195Es. SNMP can be used for critical network diagnostics and management using the open SNMP protocol.
- **Rapid Spanning Tree Protocol (RSTP – IEEE 802.1d).** The Rapid Spanning Tree protocol will allow faster recovery times in the ESTEem Mesh networks.
- **Enhanced Network Operation.** The 195E Series includes support for VLAN pass-through and IGMP Snooping to support enhanced network functionality.

Model	Frequency (MHz)	RF Data Rate
195Es	900 MHz License Free	200 Kbps
195Ed	900 MHz License Free	6-54 Mbps
195Eg	2.4 GHz License Free	1-54 Mbps
195Ep	4.9 GHz Licensed	6-54 Mbps
195Ea	5.8 GHz License Free	6-54 Mbps

Common Features

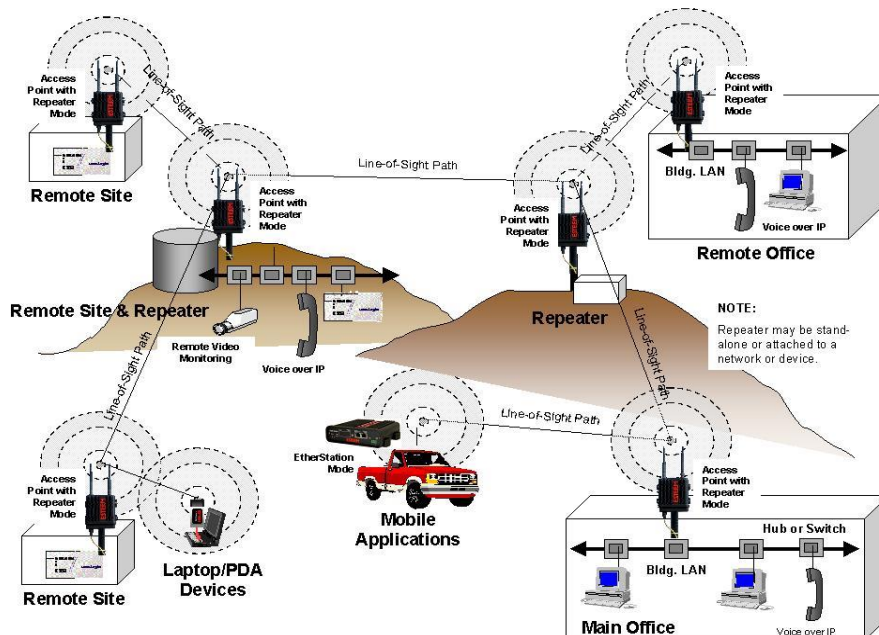
- MESHing Self Healing Network Architecture (195Ed, g,p and a)
- 5 to 10+ Mile Nominal Range
- Industrial Hardened Case
- Direct Outdoor Pole Mounting
- Extended Temperature Specifications
- Power over Ethernet (PoE)
- Dual Ethernet Ports
- Serial RS-232 Communications Port

Modes of Operation

- Ethernet Bridge Mode
 - Point-to-Point
 - Point-to-Multipoint Networks
 - All Bridges can be Repeaters
 - Scalable Wireless networking
- Access Point (AP) Modes
 - AP Bridge, AP Router and AP Masquerade
- Client Modes (Mobile)
 - EtherStation
 - Station Router
 - Station Masquerade

Security

- AES Encryption (CCMP)
- 128/64 Bit WEP Encryption
- Access Control List (ACL)
- Temporal Key Integrity Protocol (TKIP)
- 802.11i (WPA2) Compatible (195Eg & 195Ea)

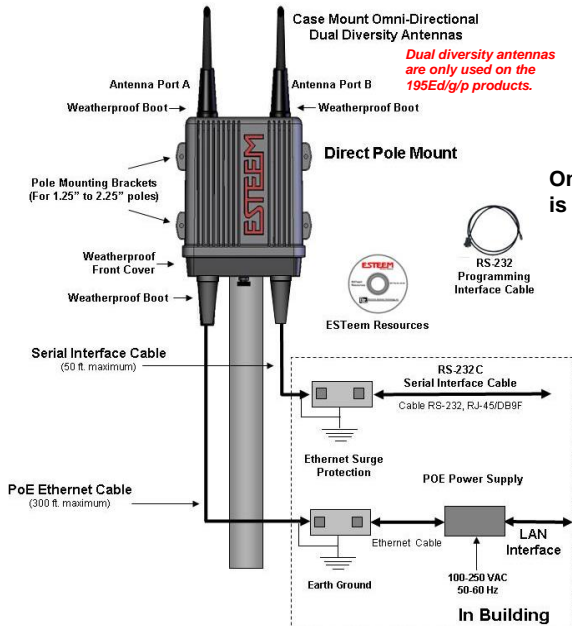


Technical Specifications

Model 195E Series

ESTeem 195E Specifications					
Transmitter/Receiver	195Es	195Ed	195Eg	195Ep	195Ea
Frequency of Operation (Software Selectable)	902 to 928 MHz	902 to 928 MHz (4-channels)	2.4 GHz (11-channels)	4.9 GHz (2-channels)	5.8 GHz (17-Channels)
RF Data Rate	200 Kbps	1 to 54 Mbps (12 steps)			
Tx Output Power (Software Selectable)	125 mW to 1 Watt (Pk) (4-levels)	250 to 1000 mW (Pk) (4-levels)	250 to 1000 mW (Pk) (4-levels)	250 to 2000 mW (Pk) (4-levels)	125mW to 500 mW
Tx Output Impedance	50 ohms				
Rx Sensitivity	-100 dBm	-95 to -72 dBm	-89 to -68 dBm	-92 to -68 dBm	-97 to -72 dBm
FCC Type Acceptance	ENPESTEEM195ES	ENPESTEEM195ED	ENPESTEEM195EG-1	ENPESTEEM195EP	ENPESTEEM195EA
Industry Canada Type Acceptance	2163A-19ES	1457A-195ED	1457A-195EG	1457A-195EP	2163A-195EA
LED Indicators	Power (On/Off) - Carrier Detect (On/Off) - Transmitter (On/Off) - Receiver (On/Off)				
Power Requirements					
Receive	220 ma @ 12 VDC	200 ma @ 12 VDC	320 ma @ 12 VDC	320 ma @ 12 VDC	250 ma @ 12 VDC
Transmit	1000 ma @ 12 VDC	450 ma @ 12 VDC	1000 ma @ 12 VDC	1500 ma @ 12 VDC	1250 ma @ 12 VDC
PoE Power Supply	(IEEE 802.3af, 13 watts) (opt)			(IEEE 802.3at, 30 watts) (opt)	
External Power Input	10 to 16 VDC @ 1000 ma	10 to 28 VDC @ 450 ma	10 to 28 VDC @ 1000 ma	10 to 28 VDC @ 1500 ma	10 to 28 VDC @ 1250 ma
Input/Output Connectors					
Ethernet Port 1 (10/100)			RJ-45 Female		
Ethernet Port 2 (10/100)			RJ-45 Female		
RS-232C Comm Port (2,400 to 115.2 K baud)			RJ-45 Female		
RS-232C Programming Port (38,400, N, 8, 1)			RJ-45 Female		
Antenna Input/Outputs	TNC Reverse Female			TNC Female	TNC Reverse Female
External DC Input Power	Mini-Combi-con, 3 pin female				
Case					
Temperature Range	-30° to +60° C				
Humidity	95% Non-condensing				
Dimensions	1.9 in. H x 6.7 in. W x 6.2 in. L				
Weight	1.25 lbs.				
Product Warranty	1 Year				
Other					
Outdoor Pole Mt. Kit			AA195PM (opt)		
PoE Power Supply	AA175 (opt)			AA175.2 (opt)	AA175.2 (opt)
External DC Input Power Connector			AA195PP (opt)		

Model 195E Series Direct Mount Antennas Hardware Diagram

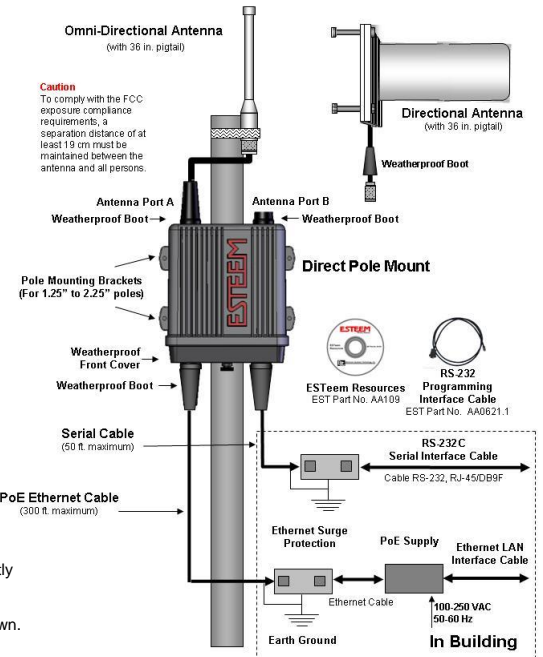


Only single Ethernet connection is shown in diagrams.



The unit can also be powered directly from 10 to 28 VDC, 0.45 to 1.5 amp (based on model) source using the optional male power connector shown. EST P/N AA195PP.

Model 195E Series External Mount Antenna Hardware Diagram



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Specifications subject to change without notice

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